

The Manipulation of Air-sensitive Compounds; by D.F. Shriver and M.A. Drezdron, Wiley, Chichester, 2nd edition, 1986, x + 326 pages, £43.25, ISBN 0-471-86773-X.

The development of organometallic chemistry as a rich and varied field has been made possible by the development of techniques for the manipulation of air-sensitive compounds. The original devices of people such as Stock and Schlenk have been refined by many generations of research workers and modified by the introduction of new materials and new commercially available equipment. D.F. Shriver's "The Manipulation of Air-Sensitive Compounds", first published in 1969, has played an important part in this updating process: a new edition is timely and welcome. Those who have worked in the area of organometallic chemistry will immediately recognise it as authoritative and based on genuine first-hand experience.

The first part deals with inert-atmosphere techniques: Schlenk tube methods, glove boxes, and the purification of gases and solvents. The second part covers vacuum lines, pumps, measurements of pressure and flow, leak detection, joints, stopcocks and valves, more specialised vacuum line operations and metal systems. There are appendices on safety, glassblowing, plastics, elastomers, and metals and, for those who use trap-to-trap fractional condensations, a table of vapour pressures at commonly used slush bath temperatures.

The text is exceedingly clearly and well written, but this is not a book that can be followed mindlessly. Descriptions of manipulative procedures are backed up by careful explanations of the physics involved, often with illustrative calculations or empirical measurements from the authors' laboratories. Graduate students beginning projects on air-sensitive compounds will find this book invaluable both as an introductory text and as a laboratory handbook to turn to again and again. Even the most experienced will learn new tricks from it and be stimulated to modify their procedures and devise new ones. Sadly, the price puts it beyond the reach of most individual students, but the chances that air-sensitive organometallic compounds will be successfully isolated and characterised will be greater in research laboratories where this book is available for consultation than in laboratories where it is not.

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